

ABSTRACT OF THE DISCLOSURE

5 The present invention provides a statistical modeling approach to automatic linguistic indexing of photographic images. The invention uses categorized images to train a dictionary of hundreds of statistical models each representing a concept. Images of any given concept are regarded as instances of a stochastic process that characterizes the concept. To measure the extent of association between an image
10 and a textual description associated with a predefined concept, the likelihood of the occurrence of the image based on the characterizing stochastic process is computed. A high likelihood indicates a strong association between the textual description and the image. The invention utilizes two-dimensional multi-resolution hidden Markov models that demonstrate accuracy and high potential in linguistic indexing of
15 photographic images.